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by Solomon W. Golomb

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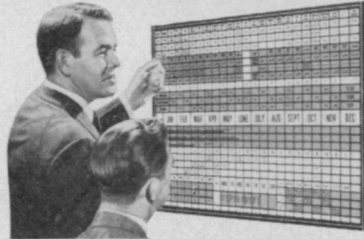
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AERONAUTICS

Spray-on Landing Field Aids VTOL Planes

► A PLASTIC LANDING field that can be sprayed on in minutes from a jeep or plane will save wear and tear on vertical take-off and landing (VTOL) jet aircraft of the future.

The downward blast of a VTOL jet coming in for a landing can chew up the ground below and draw engine-damaging bits of rock and dirt into the engines. Even helicopters need to have their rotor blades changed occasionally as a result of erosion caused by landing in dust or loose soil.

In 1960, the U.S. Air Force became worried that VTOL jets would not be able to land in remote terrain without the risk of damage from debris. USAF scientists decided that the solution was to harden the soil in landing areas so that it could withstand the engine blast.

One chemical that will do this is a plastic-based substance developed by Ling-Temco-Vought, Inc., Dallas, Texas. The material is primarily a polyester resin combined with several other ingredients including glass fibers. When a catalyst has been added to the "instant airfield," it hardens to a plastic that will withstand temperatures of 3,000 degrees Fahrenheit and temperatures of 2,500 pounds per square inch.

The material hardens in only 15 minutes in temperatures ranging from 10 to 25 degrees F.

A 59-foot diameter test field was treated with the chemical by the National Aeronautics and Space Administration, and the resulting plastic pad withstood several take-offs and landings of an X-14 VTOL. The test was reported in the journal, Chemical Week, Feb. 27, 1965.

There is one obstacle preventing full-scale use of the material by the Government: boric acid, included in the formula to increase heat resistance, settles to the bottom during storage. This means that the material must be remixed before each spraying. However, other methods are being studied to eliminate the problem.

So far the material has been applied only from jeeps, but the USAF says that it could be sprayed in a number of ways. The most remarkable would be a system built into a VTOL plane so that it could spray its own airfield, hover while the material cured and then land.

• Science News Letter, 87:162 March 13, 1965

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OCEANOGRAPHY

Marine Center Planned For Gulf Coast Area

► A GULF COAST Marine Sciences Center has been proposed as a new national laboratory to probe the ocean depths, just as national space laboratories probe the skies.

Geology, physical and chemical oceanography, marine meteorology and other research studies would be undertaken in the Gulf of Mexico and nearby waters by seven southern and southwestern universities, managed by the non-profit Southwest Research Institute.

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